BenBedPhar

cost
EUROPEAN COOPERATION
IN SCIENCE AND TECHNOLOGY

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10th BenBedPhar scientific meeting

NRF2: physiology, pathology, pharmacology, and clinical development

6-8th June, 2025, Galway, Ireland

Organizers and contact persons

Dr. Kasia Goljanek-Whysall; kasia.whysall@universityofgalway.ie
Prof. Antonio Cuadrado: antonio.cuadrado@uam.es https://benbedphar.org/

Overview.

We are excited to announce the 10th BenBedPhar Meeting, themed "**NRF2: physiology, pathology, pharmacology, and clinical development**" This scientific gathering serves as a crucial platform for experts in the field to convene and discuss advancements in understanding the NRF2 pathway's role in health and disease.

Topics will include: Mechanisms of regulation of NRF2 and its gene targets**,** Role of NRF2 in physiology and pathology. **,** Impact of NRF2 in degenerative diseases and ageing**,** Pharmacological activation and inhibition of NRF2**-** Basic to clinical to economical translation of NRF2 therapeutics**,** NRF2 Biomarkers of drug response

With the ultimate goal of facilitating critical connections necessary for advancing the NRF2 field, BenBedPhar continues its mission to provide a dynamic space for researchers to collaborate, share findings, and foster connections across various life science disciplines. We remain steadfast in our commitment to promoting young researchers and encourage them to present their work.

Program

Satellite meeting to the Society for Free Radical Research International meeting

- **Friday morning, June 6:** Management Committee meeting (for members only)
- **Friday afternoon, June 6, and Saturday, June 7:** Satellite Symposium (open also to all delegates of the 22nd Biennial SFRRI Conference without additional registration fee)
- **Saturday, June 7:** Dinner (for BenBedPhar members only)
- **Sunday, June 8:** Excursion (for BenBedPhar members only)

PROGRAMME

Friday, 6th June, Human Biology Building, Large Lecture Theatre
14:50 – 15:00
Welcome and Introduction
Kasia Goljanek-Whysall and Antonio Cuadrado

15:00 – 15:50
Plenary Lecture
Chairs: Antonio Cuadrado and Kasia Goljanek-Whysall

Masayuki Yamamoto
(Tohoku University, Tohoku Medical Megabank Organization, Sendai, Japan)
Discovery and characterization of the KEAP1-NRF2 pathway

Session 1
Chairs: Antonio Cuadrado and Kasia Goljanek- Whysall

15:50 – 16:20
Ana Tomašić Paić, Marina Oskomić, Lea Barbarić, **Mihaela Matovina**
(Division of Organic Chemistry and Biochemistry, Ruđer Bošković Institute, Zagreb, Croatia)
DPP3 as a modulator of NRF2-KEAP1 pathway: Insights from CRISPR-Cas9 knockout and gene expression analysis

16:20 – 16:50
Shara Natalia Sosa Cabrera, Eleni Petsouki, Katrin Fischhuber, Manuel Matzinger, **Elke H. Heiss**
(Department of Pharmaceutical Sciences, Division of Pharmacognosy, University of Vienna, Vienna, Austria)
NRF2 in dialogue with amp-activated kinase and cellular energy metabolism

16:50 – 17:20
Hozumi Motohashi
(Department of Medical Biochemistry, Tohoku University Graduate School of Medicine, Sendai, Japan)
Metabolic and immunological features of NRF2-activated cancers.

17:20 – 17:50
Coffee and Poster viewing

Session 2
Chairs: Brigitta Buttari and Ian Copple

17:50 – 18:20
Miroslav Novak, Sharadha Dayalan Naidu, Dina Dikovskaya, Terry W. Moore, and **Albena T. Dinkova-Kostova**
(Division of Cancer Research, University of Dundee School of Medicine, Dundee, U.K.)
Pharmacological inhibition of KEAP1 by cysteine-targeting electrophiles and non-electrophilic protein-protein interaction inhibitors

18:20 – 18:50

Iveta Bernatova, Michal Kluknavsky, Aybuke Bozkurt, Andrea Micurova, Anjum Anjum, Peter Balis
(Centre of Experimental Medicine, Institute of Normal and Pathological Physiology, Slovak Academy of Sciences, Bratislava, Slovakia)
Effects of dimethyl fumarate on plasma triglyceride levels and PPAR alpha gene expression in hypertriglyceridemic rats exposed to chronic crowding stress

18:50 – 19:20

Andreas Daiber
(Center for Cardiology, Cardiology I, University Medical Center of the Johannes Gutenberg-University, German Center for Cardiovascular Research (DZHK), Partner Site Rhine-Main, Mainz, Germany)
Prevention of environmental stress and damage by activation of nuclear factor erythroid 2-related factor 2 (NRF2) and associated pathways

19:20 – 19:50

Claire Fayad, Alexey Afonin, Laura Mussalo, Riikka Lampinen, Pasi Jalava, **Katja M. Kanninen**
(A.I. Virtanen Institute for Molecular Sciences, University of Eastern Finland, Kuopio, Finland)
Temporal assessment of the NRF2 antioxidant response signaling induced by air pollution exposure

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Saturday, 7th June, Human Biology Building, Large Lecture Theatre

Session 3

Chairs: Ana S Falcao and Isabel Lastres-Becker

09:00 – 09:30

Brigitta Buttari
(Istituto Superiore di Sanità, Rome, Italy)
Sex differences in NRF2-mediated stress response and autophagy in MASLD and MASH models: Implications for therapeutic strategies

09:30 – 10:00

Ian Copple
(University of Liverpool, Liverpool, UK)
Advances and challenges translating the NRF2 science to the clinic

10:00 – 10:30

Anna-Lisa Levonen
(A.I. Virtanen Institute for Molecular Sciences, University of Eastern Finland, Kuopio, Finland)
Biomarkers of NRF2 activation in non-small cell lung carcinoma

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10:30 – 11:00
Coffee and Poster viewing

Session 4

Chairs: Erkan Tuncay and Noemi Mencarelli

11:00 – 11:30

Ana S. Falcão, Margarida Pedro, Sandra Tenreiro, and Miguel C. Seabra

(*NOVA Medical School, Universidade Nova de Lisboa, Lisboa, Portugal)*
Preclinical testing of dimethyl fumarate as a repurposing therapeutic approach for early age-related macular degeneration

11:30 – 12:00
Ignacio Silva-Llanes, Lilia A. Smith, Aaron Abdelkader- Guillén, José Jiménez-Villegas, David Sarrió, Gema MorenoBueno, and **Isabel Lastres-Becker**
(Instituto de Investigaciones Biomédicas "Sols-Morreale" UAM-CSIC, Instituto de Investigación Sanitaria La Paz (IdiPaz), Department of Biochemistry, School of Medicine, Universidad Autónoma de Madrid (UAM), and Centro de Investigación Biomédica en Red, Área Enfermedades Neurodegenerativas, CIBERNED, Instituto de Salud Carlos III, Madrid, Spain)
Targeting pyroptosis: Exploring the role of mimethyl fumarate in TAU-driven neuroinflammation and neurodegeneration

12:00 – 12:30
Georgios Psarias, Panos G. Ziros, Dionysios V. Chartoumpekis, and **Gerasimos P. Sykiotis**
(*Lausanne University Hospital and University of Lausanne, Lausanne, Switzerland)*
Dissecting oxidation-dependent and oxidation-independent components of thyroid autoregulation

12:30 – 13:00
Antonio Cuadrado, Daniel Carnicero-Senabre, Angel J. García-Yagüe, Marta Olazabal-Chias, Eduardo Cazalla, José Jiménez-Villegas, Raquel Fernández-Ginés, Maribel Escoll and Ana I. Rojo
(Department of Biochemistry, Medical School, Autonomous University of Madrid, Madrid, Spain)
Targeting transcription factor NRF2 for brain protective therapy in Alzheimer's disease

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13:00 – 14:30
Lunch and Poster viewing

Session 5
Chairs: Sharadha Dayalan Naidu and Ana I. Rojo

14:30 – 15:00
Leila Aryan, Suatnur Şık, Ibrahim Turkel, Firat Akat, Gokhan Burcin Kubat, **Erkan Tuncay**
(Department of Biophysics, Ankara University, Faculty of Medicine, and Department of Mitochondria and Cellular Research, University of Health Sciences, Ankara, Turkiye)
Mitochondrial transplantation activates NRF2 to restore cardiac function in heart failure

15:00 – 15:30
Harry van Goor, Udo Mulder, Imran Ertugrul, Yang Luo, Florent Alagnat, Hannie Westra, and Nik Morton
(*University Medical Center Groningen, Groningen, the Netherlands)*
Thiosulfate as modulator of oxidative stress through NRF2 signalling

15:30 – 16:00
Aleksandra Kopacz, Damian Kloska, Anna Bar, Marta Targosz-Korecka, Dominik Cysewski, Kamil Awsiuk, Aleksandra Piechota-Polanczyk, Milena Cichon, Stefan Chlopicki, Alicja Jozkowicz, and **Anna Grochot-Przeczek**

(Department of Medical Biotechnology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland)
Endothelial deletion of miRNA-34a blocks aortic aneurysm development in NRF2 KO mice – focus on endothelial cell proliferation

16:00 – 16:30
Noemi Mencarelli
(*Department of Pharmacy, University "G. d'Annunzio" of Chieti-Pescara, Chieti, Italy)*
NRF2 modulation in macrophages as therapeutic strategy for tendon healing in tendinopathy

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16:30 – 17:00
Coffee and Poster viewing

Session 6
Chairs: Iveta Bernatova and Katja M. Kanninen

17:00 – 17:30
Sharadha Dayalan Naidu, Tom Dixon, John D. Hayes, and Albena T. Dinkova-Kostova
(University of Dundee, Dundee, U.K.)
Regulation of microRNAs by NRF2 activation in fibrosis

17:30 – 18:00
José Jiménez-Villegas, Daniel Carnicero-Senabre, Janine Kirby, Ana Mata, Susana Cadenas, Martin R. Turner, Andrea Malaspina, Pamela J. Shaw, Adrià Sicart, Ludo Van Den Bosch, Antonio Cuadrado, and **Ana I. Rojo**
(Department of Biochemistry and Biomedical Research Institute "SolsMorreale" (UAM/CSIC), Madrid, Spain)
NRF2 as a therapeutic target in ALS: Insights into RNA metabolism and redox homeostasis

18:00 – 18:30
Silvia Calero-Pérez, Inés Barahona, Elena del Fresno, Laura Villamayor, Águeda González-Rodríguez, M. Pilar Valdecantos, and **Ángela M. Valverde**
(*Institute of Biomedical Research Sols-Morreale, Spanish National Research Council (CSIC-UAM), and Network for Biomedical Research in Diabetes and Associated Metabolic Diseases (CIBERDEM, ISCIII), Madrid, Spain)*
Uncovering interactions between the NRF2 pathway and the plasticity of liver progenitor cells in liver diseases

18:30 – 19:00
Donna D. Zhang
(*Department of Molecular Medicine, UF Scripps, Jupiter, FL, USA)*
Persistent suppression of ferroptosis by NRF2 is essential for tumor maintenance

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19:00-19:10
Farewell
Kasia Goljanek-Whysall and Antonio Cuadrado

POSTERS

1. HK3 MEDIATED ANTI FIBROTIC EFFECTS ARE NRF2 INDEPENDENT
Elisabeth Rohbeck, Sharadha Dayalan Naidu, Albena T. Dinkova Kostova, **Jürgen Eckel (***CMR CureDiab Metabolic Research GmbH, Düsseldorf, Germany)*

2. NOVEL INSIGHTS INTO THE BACH1-NRF2 AXIS; NEW TARGET GENES AND INHIBITORS
Donika Klenja-Skudrinja, Kevin Ali, Volkan Sayin, and **Laureano de la Vega** *(Division of Cancer Research, University of Dundee, Dundee, U.K.)*

3. EXPLORING MEDITERRANEAN DIET-DERIVED PHYTOCHEMICALS AS NRF2 ACTIVATORS TO MITIGATE OBESITY-RELATED INFLAMMATION
Sónia A. Pinho, Ana Silva, Sónia Silva, Eugénia Carvalho, Anabela Marisa Azul, Paulo Matafome, Cláudia Pereira, Paulo J. Oliveira, and Maria Teresa Cruz (*Center for Neuroscience and Cell Biology, Center for Innovative Biomedicine and Biotechnology (CIBB), and Institute of Clinical and Biomedical Research (iCBR), Faculty of Medicine, University of Coimbra, Coimbra, Portugal)*

4. EFFECT OF THE DJ-1/NRF2 PATHWAY ON NLRP3 INFLAMMASOME ACTIVATION AND HIGH SALT DIET-INDUCED BLOOD PRESSURE ELEVATION
Celia Arias, Raisha Garcia, Jacob Polzin, Laura María Del Carmen Gallego-López, Carmen De Miguel, Jun Feranil, Ines Armando, Pedro Jose, and **Santiago Cuevas** (*Division of Renal Diseases & Hypertension, Department of Medicine, The George Washington University, Washington, DC, USA)*

5. MIR-130: NRF2 INTERACTIONS REGULATE CELL SENESCENCE DURING AGEING
Maria Borja-Gonzalez, Jose C. Casas-Martinez, Qin Xia, Raul Gonzalez-Ojeda, Brian McDonagh, and Katarzyna Goljanek-Whysall *(Discipline of Physiology, College of Medicine, Nursing and Health Sciences and Galway RNA Research Cluster, University of Galway, Galway, Ireland)*

6. GLUCOSE AND GLICEROL REGULATION OF AQUAPORINS AND NRF2 EXPRESSION IN BREAST CANCER CELL LINES
Monika Mlinarić, Ivan Lučić, Ana Josipa Jeroničić, Lidija Milković, and **Ana Čipak Gašparović** *(Division of Molecular Medicine, Ruđer Bošković Institute, Zagreb, Croatia)*

7. ANTIFERROPTOTIC EFFECTS OF H2S DONORS AGAINST DIABETIC INJURY OF β-CELLS IN VIVO AND IN VITRO
Milica Markelic, Ana Stancic, Nevena Savic, Marko Miler, Vesna Martinovic, Ksenija Velickovic, Tamara Saksida, Ilijana Grigorov, Milos Filipovic, and Vesna Otasevic *(Department of Cell and Tissue Biology, Faculty of Biology, University of Belgrade, Belgrade, Serbia)*

8. NRF2 ISOFORM 2 IS EXPRESSED IN HUMAN CELLS AND UNDERGOES RAPID PROTEASOMAL DEGRADATION
Zuzanna Urban-Wójciuk, Alicja Dziadosz-Brzezińska, Sara Kusinski, Maciej Cieśla and **Alicja Sznarkowska** *(International Centre for Cancer Vaccine Science, University of Gdansk, Gdansk, Poland)*

9. A NOVEL β-TrCP1/NRF2 INTERACTION INHIBITOR FOR EFFECTIVE ANTI-INFLAMMATORY THERAPY
Ángel J. García-Yagüe[1], Lucía Cañizares-Moscato, José Antonio Encinar[6] Eduardo Cazall, Raquel Fernández-Ginés, Maribel Escoll, Ana I. Rojo and Antonio Cuadrado (*Department of Biochemistry, School of Medicine, Autonomous University of Madrid (UAM), Madrid, Spain*)

10. NRF2 SUPPRESSION BY ITOPRIDE ENHANCES CISPLATIN SENSITIVITY IN MCF-7 CELLS

Tuba Tüylü Küçükkılınç*, Ayşe Ercan, Seyhan Türk (*Hacettepe University, Faculty of Pharmacy, Sihhiye-Ankara Turkey*)

11. THERAPEUTIC POTENTIAL OF THE NRF2/ARE PATHWAY IN DOXORUBICIN-INDUCED CARDIOTOXICITY

Alina Luchkova, Ana Mata, María González-Noé, Thilo Hagen, and **Susana Cadenas** (*Centro de Biología Molecular Severo Ochoa (CSIC/UAM), Madrid, Spain)*

12. LAMININ-α2 CHAIN DEFICIENCY LEADS TO MULTI-ORGAN OXIDATIVE STRESS

Susana G. Martins, Mafalda Pita, Vanessa Ribeiro, Catarina Melo, Inês Fonseca, Sharadha Dayalan Naidu, Albena Dinkova-Kostova, Sólveig Thorsteinsdóttir, and Ana Rita Carlos *(Centre for Ecology, Evolution and Environmental Changes (CE3C) & CHANGE and Department of Animal Biology, Faculty of Sciences, University of Lisbon, Lisbon, Portugal)*

13. THE ANTI-INFLAMMATORY CYCLOPENTENONE PROSTAGLANDIN 15-DEOXY-Δ12,14-PGJ2 (15d-PGJ2) INHIBITS TRANSCRIPTION FACTOR BACH1

Jialin Feng*, Donika Klenja-Skudrinja, Laureano de la Vega, and Albena Dinkova-Kostova (*School of Medicine, University of Dundee, Dundee, U.K.)*

14. ARIPIPRAZOLE, BUT NOT OLANZAPINE, ALTERS THE RESPONSE TO OXIDATIVE STRESS IN FAO CELLS BY REDUCING THE ACTIVATION OF MITOGEN-ACTIVATED PROTEIN KINASES (MAPKS) AND PROMOTING CELL SURVIVAL

Barbara Kramar, Tinkara Pirc Marolt, Ayse Mine Yilmaz Goler, Dušan Šuput, Irina Milisav, **María Monsalve** *(Institute of Pathophysiology, Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia)*

15. ANTIFERROPTOTIC EFFECTS OF H_2S DONORS AGAINST DIABETIC INJURY OF β-CELLS *IN VIVO* AND *IN VITRO*

Milica Markelic, Ana Stancic, Nevena Savic, Marko Miler, Vesna Martinovic, Ksenija Velickovic, Tamara Saksida, Ilijana Grigorov, Milos Filipovic, and Vesna Otasevicv (*Department of Cell and Tissue Biology, University of Belgrade, Faculty of Biology,– Belgrade, Serbia)*

16. GLUCOSE AND GLICEROL REGULATION OF AQUAPORINS AND NRF2 EXPRESSION IN BREAST CANCER CELL LINES

Monika Mlinarić, Ivan Lučić, Ana Josipa Jerončić, Lidija Milković, and Ana Čipak Gašparović *(Division of Molecular Medicine, Ruđer Bošković Institute, Zagreb, Croatia)*

17. DOES NRF2 MODULATE CHEMOKINES RESPONSIBLE FOR REGULATION OF Treg INFILITRATION OF THE BRAIN IN DEPRESSION?

Michel-Edwar Mickael, Norwin Kubick, Jarosław Olav Horbańczuk, Atanas G Atanasov , Piotr Religa, Mariusz Sacharczuk, Michał Ławiński. *Institute of Genetics and Animal Biotechnology, Polish Academy of Sciences, Postępu 36A, 05-552 Jastrzębiec, Poland.*